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AUTHOR	Hammer, Patricia Cahape; Demmert, William G., Jr.
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ABSTRACT

This digest reports on the very limited research that has focused specifically on early childhood issues in American Indian and Alaska Native (AI/AN) health, development, and education. Extant research focuses primarily on infant mortality, birth weight and growth, obesity, and hearing and speech. Beginning in 1985, a longitudinal study called the Flower of Two Soils investigated intellectual development, mental health, and academic achievement among young Native children. Various reports based on this study looked at differences in IQ scores between Native and non-Native children; the influences of poverty, poor prenatal care, English-language skills, and parental educational attitudes on those differences; and the possible relationship of culture to symptoms of hyperactivity and attention deficit disorders. Other studies have evaluated various approaches to assessing language-learning disabilities in young Native children who may have limited English-language skills. The ongoing Early Childhood Longitudinal Survey, which includes an oversample of AI/AN children entering kindergarten, is conducting a thorough study of AI/AN early childhood health, development, and education. (SV)

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American Indian and Alaska Native Early Childhood Health, Development, and Education Assessement Research

Patricia Cahape Hammer and William G. Demmert, Jr.

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Few scientific studies have focused on American Indian and Alaska Native (AI/AN) infants, toddlers, and young children. Of the studies that have, most tend to focus on particular tribes or Native communities, limiting our ability to generalize to the whole Native American population. This Digest reports on the limited research base that has been created since the late 1980s on issues specific to young AI/AN children. Most of these investigations have taken place in the education assessment and health domains. Not covered in this Digest are program evaluation studies, which also may be of interest to educators (see Demmert, 2001 and Marks, et al, 2003 for indepth summaries of the research and evaluation literatures).

Health

Infant, neonatal, and postneonatal mortality. A 1998 Indian Health Service report showed solid gains in reducing infant mortality rates among AI/ANs residing in areas served by the Indian Health Service (IHS, 1998). Mortality rates in this report dropped from 62.7 deaths per 1000 in 1955 to 7.6 in 1995, which is the same rate as for the total U.S. population, though slightly worse than for Whites (6.3 deaths per 1,000 in 1995). Neonatal mortality rates have also

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dramatically improved, with a reduction in deaths of about two thirds between the early 1970s and the mid-1990s (the most recent data available).

However, a recent study by Baldwin et al. (2002) noted that these statistics track only indicators for geographic areas served by the IHS—mostly nonmetropolitan counties with tribal lands. In a cross-sectional study of all 1989-1991 singleton AI/AN births to U.S. residents, Baldwin and colleagues investigated several indicators to provide a national profile of rural and urban AI/AN infant and maternal health and provided the following findings: "Both rural and urban AI/ANs were 2 to 3 times more likely than Whites . . . to receive an inadequate pattern of prenatal care" (p. 9), with urban AI/ANs more often receiving adequate care than rural AI/ANs. Rates for low birth weight were higher than for Whites, with urban rates worse than rural; and rates for postneonatal deaths (29 days to 1 year old) were very high for both rural and urban AI/ANs—more than twice the rate for Whites. Most of the latter resulted from sudden infant death syndrome, infectious diseases, and unintentional injuries (and homicide in urban areas).

Birth weight and growth. Peck and associates (1987) examined the relationship between birth weight and subsequent growth of children, using data routinely collected by the Navajo Nation Special Supplemental Program for Women, Infants, and Children. They reported that children born with weights less than 2,500 grams were consistently shorter, lighter, and thinner than those born with higher

weights, and that they never fully caught up with the other Navajo children.

Obesity. However, there appears to be much greater concern about overweight than underweight among young AI/AN children. In a study of 12,559 Indian children aged 5-17 in the Aberdeen (SD) area, researchers found a high prevalence of overweight and obesity based on elevated body mass index (BMI) data (Zephier, Himes, & Story, 1999). Zephier et al., reported that among this population, "even at the youngest school ages, overweight is more than twice as likely as national patterns and obesity is more than three times as prevalent" (p. S30). These findings echoed an earlier nationwide study of 9,464 AI schoolchildren (aged 5-18 years) living on or near Indian reservations (Jackson, 1993), which concluded that overweight is much more prevalent among AI children than among other U.S. populations in both sexes and at all ages. In an effort to understand why the rates are so high, Harvey-Berino et al. (2000) studied the eating and activity patterns of a group of 20 Mohawk children, aged 1.5 to 4 years. They discovered that there was no notable difference in level of the activity or the types of food between the group of 13 overweight children and the group of 7 who were not overweight, but the overweight children consumed an average of 402 kcal more energy intake per day. According to the researchers, these findings indicate that reducing dietary fat would be a less effective intervention than adjusting portion sizes, and that efforts to prevent obesity in AI children should begin in infancy, "as obesity rates are already high

by the time the children are toddlers" (p. 566).

Hearing and speech. A final AI/AN health-related concern that has received particular study is the relationship of early recurrent otitis media with effusion (OME) on speech disorder. Thielke and Shriberg (1990) note that a series of studies reported a high incidence of OME among various tribal groups. Their own research has linked early recurrent OME to a 4.63 increased risk for speech disorder among American Indian children (Shriberg et al., 2000). Consequently, they urge increased awareness in the AI/AN community of the additional risk to normal acquisition of communicative competence that is posed by this common medical condition if left untreated.

Assessment and Ability

Beginning in 1985, Morton Beiser and colleagues conducted a longitudinal investigation of intellectual development, mental health, and academic achievement among Native children (Beiser & Gotowiec, 2000; Beiser, Sack, & Dion, 1998; Beiser, Dion, & Gotowiec, 2000; Dion, Gotowiec, & Beiser, 1998). The study included 691 Native and 234 non-Native children (grades 2 and 4) from settings in North America representing four of the seven major Indigenous cultural groups as defined by anthropologists, namely the Plains, Northwest Coast, Northern Woodlands, and Desert groups. One community was selected from each of the four cultural areas, and random comparison samples of non-Natives were drawn from near by reservations or reserves. Data were collected from parents, teachers, and students on a wide range of demographic, health, development, linguistic, and other variables.

Gottlieb and his associates continue to analyze data from this study (called the Flower of Two Soils), publishing reports on intellectual development, mental health, and academic achievement findings.

One report (Beiser & Gotowiec, 2000) focused on factors contributing to the lower IQ scores (as measured by the Wechsler Intelligence Scale for Children Revised (WISC-R) of Native compared to the non-Native children in the sample. Using hierarchical multiple regression analyses, the researchers were able to explain most of the difference (12.5 of the 22 point difference in the verbal score and 5.3 of the 7.9 point difference in the performance score) as related to several factors: economic disadvantage, inadequacy of prenatal care, English-language skills, and parental cultural attitudes toward school. Noting the controversy surrounding intelligence testing especially the testing of non-mainstream populations, Beiser and Gotowiec offered the following explanation for their attention to IQ scores:

> To assume that IQ measures "intelligence" is to attribute more weight to IQ scores than they merit. This does not, however, mean that one can simply dismiss IQ testing. IQ scores are a powerful predictor of success in the majority-culture-dominated schools that most Native children attend. . . . (2000, p. 247).

Further, their study tended to support "the contention of no less an authority than Binet, that the IQ test does not measure anything innate or permanent," nor that low IQ scores "necessarily signify innate incapacity" (2000, p. 249). Instead there were a collection of

environmental factors influencing the young students' performance in this study, including the strained relations between Native parents and schools operated by the larger society.

Other analyses of data from the Flowers of Two Soils and another similar population sample centered on the role of culture in affecting symptoms of hyperactivity or attention deficit disorders in young children. Beiser, Dion, and Gotowiec (2000) concluded that "there is nothing culture-bound about the symptoms of either hyperactivity or attention-deficit. Furthermore, direct comparisons of symptom levels revealed more similarity than difference in the extent to which these patterns affected First Nations and non-Native children in the early school years" (p. 435). The researchers did call for further investigations, however, into the ways "cultural context may affect the response of parents and teachers to these potentially long-lasting problems of childhood" (p. 435).

A widespread concern in AI/AN communities is that standardized assessments may lead to the under- and overrepresentation of AI/AN children in special education programs. Various remedies have been recommended, including renorming tests to local populations, translating test items, developing tests from a cultural context, and using descriptive assessment measures. Several researchers investigated approaches to the assessment of young AI/AN children (outlined next). None of the following studies were based on representative samples and, therefore, cannot be used to make generalizations about practices involving the whole population of young AI/AN children. However, their findings could be indicative of

future directions for research.

Ukrainetz and colleagues (2000) explored the use of *dynamic assessment* with 23 Arapahoe/Shoshone kindergartners as a less biased evaluation procedure for assessing language-learning ability. This approach uses a test-teach-test sequence. Children's performance is scored based on observing their learning strategies (e.g., ability to attend, plan, and self-regulate) and their modifiability (i.e., the extent to which a child changes in response to being taught and the intensity of effort required on the part of the teacher to effect the change), and the change in their pretest-posttest scores. The researchers found that "both ratings of modifiability and change in test scores provide important information toward a diagnosis of language impairment in a minority child" (p. 152) and that dynamic assessment shows potential as a language evaluation approach.

Noting that there are minimal screening and assessment tools for detect potential language disorders among AI/AN preschoolers, Christensen and Long (1998) investigated the effectiveness of using the Pediatric Developmental Instrument (PDI), an indirect screening instrument originally normed on tests using large groups of mainstream children. Indirect screening involves collecting data about children based on their caretakers' observations instead of the direct observations of a diagnostician. Based on a small random sample of 20 Head Start children (10 Cherokee and 10 Caucasian), the researchers concluded that "the PDI scores for nonreservation, English-speaking Cherokee Indian children found in this study indicated that the children may score lower on standardized language tests but not be

language delayed or language disordered" (p. 5). Further, the researchers suggested that the PDI, a standardized parent questionnaire screening test, deserves further study and consideration as a potentially valuable part of a speech-language pathologist's battery of language assessment tools.

Lastly, in another small survey involving a convenience sample drawn from five regions across the United States that included 20 AI/AN parent respondents (59 percent response rate) and 11 professional respondents (85 percent response rate), Banks (1997) found widespread reliance on norm-referenced standardized assessment instruments in making treatment decisions about the special learning needs of young AI/AN children (8 years and under). She concluded, "The majority of the reported practices revealed gaps between recommended practices and 'in use' practices. There were also some significant differences between the parent/caregiver and professional participant groups regarding assessment practices and corresponding perceptions of validity" (p. 36).

Conclusions

As evidenced in this brief review, research is very scarce that has a focus specifically on early childhood issues in American Indian and Alaska Native health, development, and education. Extant research focuses primarily on infant mortality, birth weight and growth, obesity, and hearing and speech, with little study of intellectual development and academic performance. Not since the mid 1970s has a thorough study of the condition of AI/AN early childhood health,

development, and education been conducted. The exception is the RAND Corporation study currently underway for the U.S. Department of Education, The Early Childhood Longitudinal Survey, which includes an oversample of AI/AN children entering kindergarten. This RAND report is expected to be completed in early 2004 and should provide valuable new and heretofore unreported information on young Native Americans.

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Patricia Cahape Hammer is the director of the ERIC Clearinghouse on Rural Education and Small Schools at Appalachia Educational Laboratory (Charleston, WV).

William G. Demmert, Jr. is

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